App. No. 09/995200
Amd. Dated November 18, 2003
Office Action Dated June 18, 2003

REMARKS

Reconsideration is respectfully requested in view of the following remarks. Claims 7-26 have been withdrawn in view of a previous restriction requirement. No new matter has been added. Claims 1 and 27-34 are pending.

Claim rejections - 35 U.S.C. § 103

Claims 1-4 and 27-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snodgrass et al. (US 5,311,406). Applicant respectfully traverses the rejection, and respectfully requests reconsideration in view of the following. Snodgrass et al. is relied upon to suggest a board constructed of two dissimilar materials (PTFE and fiberglass) so as to have reduced flexibility, thereby eliminating solder joint failures and increasing board reliability. Even if Snodgrass can be considered to teach fiberglass and PTFE in the making of multi-layer printed wiring boards, which point Applicant does not concede, Snodgrass et al. does not disclose the specific arrangement of the insulating substrates and signal wiring layers of the present invention, nor the specific resistance range of the signal wiring layers.

In the present invention the signal wiring layer, which is suitable for high-speed low-impedance signal transmission, is separated from the adjacent metal layer by an insulating substrate made from an insulator material. The insulator material of this adjacent insulating substrate has a dielectric coefficient higher than that of the insulator material forming other insulating substrates that are not adjacent to the signal wiring layer for high-speed low impedance signal transmission. This renders the resistance of

the signal wiring layer for high-speed low impedance transmission controllable within the range of 25.2 to 30.8 ohms.

Even if the desired resistance value can be achieved by changing other variables, as the rejection suggests, changing the other variables may incur undesirable results. For instance, an increase in the width of the traces of the wiring layers will lead to signal interference. The present invention, by virtue of the unique constriction of the circuit board, can achieve low resistance for high-speed low impedance signal transmission without increasing the width of traces of the wiring boards, thereby minimizing signal interference. Moreover, the total thickness of the circuit board of the present invention can be maintained to be in compliance with industry standards. Accordingly, it is respectfully submitted that claim 1 and claims dependent therefrom are patentable over Snodgrass et al. Applicant does not concede the correctness of the rejection. Withdrawal of the rejection is respectfully requested.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snodgrass et al. (US 5,311,406), as applied to claims 1-3, and further in view of Arthur et al. (US RE36,396). Applicant respectfully traverses the rejection, and respectfully requests reconsideration in view of the following.

Claims 5 and 6 depend from claim 1, and incorporate the limitations thereof. The comments presented above with regard to claim 1 apply equally to claims 5 and 6.

Arthur et al. is relied upon to suggest a ceramic filled-fluoropolymer-based electrical substrate material. However, Arthur et al. also fails to teach the construction of the circuit board of the present invention to achieve the specific resistance range of the

present invention. Thus, Arthur et al. does not remedy the deficiencies of Snodgrass et al., as noted previously. Accordingly, it is respectfully submitted that claims 5 and 6 are patentable over Snodgrass et al. in view of Arthur et al. Applicant does not concede the correctness of the rejection. Withdrawal of the rejection is respectfully requested.

In view of the above, favorable reconsideration in the form of a notice of allowance is requested. Any questions or concerns regarding this communication can be directed to the undersigned attorney, Michael D. Schumann, Reg. No. 30,422, at 612.336.4638.

Respectfully submitted,

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Dated: November 18, 2003

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MDS:smm